

CLAIMS

1. A method for screening therapeutic agents for use in combating diseases associated with gene regulation by one or more Smad proteins and TGF β or activin, said method comprising detecting or assaying the extent or result of transcriptional activity or binding in the presence of said agent between a Smad protein or a DNA binding fragment thereof and a double strand oligonucleotide comprising the sequence 5' WXYCAGACZ 3' or a functional equivalent thereof, wherein in said nucleotide sequence W represents A or G, X represents G or T, Y represents C, A, G or T and Z represents A or C.

2. A method according to claim 1 wherein the double strand oligonucleotide comprises the sequence 5' WXYCAGACZ 3' or a functional equivalent thereof, wherein in said nucleotide sequence W represents A or G, X represents G or T, Y represents C, A or G and Z represents A or C.

3. A method according to claim 1 or 2 wherein the double strand oligonucleotide comprises the sequence 5' AG(C/A)CAGACA 3', or a functional equivalent thereof.

4. A method according to claim 1 or 2 wherein the double strand oligonucleotide comprises the sequence 5' ATGCAGACA 3' or 5' GGCCAGACA 3', or a functional equivalent thereof.

5. A method according to ~~any one of claims 1-3~~ ^{claim 1} for use in the treatment of fibrotic disorders, abnormal wound healing, abnormal bone formation, cancer development, haematopoiesis, neuroprotection and immune and inflammatory disorders.

6. A kit for screening agents suitable for combating diseases associated with gene regulation by one or more Smad proteins and TGF β or activin, said kit comprising:

- a Smad protein as hereinbefore defined
- TGF β or activin
- a double strand DNA molecule comprising the sequence 5' WXYCAGACZ 3' or a functional equivalent thereof, wherein in said nucleotide sequence W represents A or G, X represents G or T, Y represents C, A or G and Z represents A or C, said sequence optionally being in operable linkage with a promoter or enhancer sequence and coding region of a gene whose product is detectable.

7. A method of treating a disease associated with gene regulation by means of one or more Smad proteins and TGF β or activin, said method comprising administering to a mammal, including a human, a double strand oligonucleotide comprising the sequence 5' WXYCAGACZ 3' or a functional equivalent thereof, wherein in said nucleotide sequence W represents A or G, X represents G or T, Y represents C, A or G and Z represents A or C.
8. Use of a double strand oligonucleotide comprising the sequence 5' WXYCAGACZ 3' or a functional equivalent thereof, wherein in said nucleotide sequence W represents A or G, X represents G or T, Y represents C, A or G and Z represents A or C, in the treatment of a disease associated with gene regulation by one or more Smad proteins and TGF β or activin.
9. Use of a double strand oligonucleotide comprising the sequence 5' WXYCAGACZ 3' or a functional equivalent thereof, wherein in said nucleotide sequence W represents A or G, X represents G or T, Y represents C, A or G and Z represents A or C, in the manufacture of a medicament for the treatment of a disease associated with gene regulation by one or more Smad proteins and TGF β or activin.
10. A method of treating a disease associated with gene regulation by means of one or more Smad proteins and TGF β or activin, said

method comprising administering to a mammal, including a human, a therapeutic amount of an agent which inhibits or activates transcriptional activity or binding of said Smad proteins with a promoter or enhancer implicated in the gene regulation by TGF β or activin, said promoter or enhancer comprising the nucleotide sequence 5' WXYCAGACZ 3' or a functional equivalent thereof, wherein in said nucleotide sequence W represents A or G, X represents G or T, Y represents C, A or G and Z represents A or C.

11. Use of a therapeutic amount of an agent which inhibits or activates transcriptional activity or binding of one or more Smad proteins with a promoter or enhancer implicated in the gene regulation by TGF β or activin, said promoter or enhancer comprising the nucleotide sequence 5' WXYCAGACZ 3' or a functional equivalent thereof, wherein in said nucleotide sequence W represents A or G, X represents G or T, Y represents C, A or G and Z represents A or C, in the treatment of a disease associated with gene regulation by one or more Smad proteins and TGF β or activin.
12. Use of a therapeutic amount of an agent which inhibits or activates transcriptional activity or binding of one or more Smad proteins with a promoter or enhancer implicated in the gene regulation by TGF β or activin, said promoter or enhancer comprising the nucleotide sequence 5' WXYCAGACZ 3' or a functional equivalent thereof, wherein in said nucleotide sequence W represents A or G, X represents G or T, Y represents C, A or G and Z represents A or C, in the manufacture of a medicament for the treatment of a disease associated with gene regulation by one or more Smad proteins and TGF β or activin.
13. A method of treating a disease associated with gene regulation by one or more Smad proteins and TGF β or activin, comprising administration to a mammal, including a human, of a therapeutic

Claim 1

a amount of an agent identified in the method according to ~~any one of~~
~~claims 1-4~~.

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14. Use of a therapeutic amount of an agent identified in the method according to ~~any one of claims 1-4~~ ^{Claim 1} in the treatment of a disease associated with gene regulation by one or more Smad proteins and TGF β or activin.
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15. Use of a therapeutic amount of an agent identified in the method according to ~~any one of claims 1-4~~ ^{Claim 1} in the manufacture of a medicament for the treatment of a disease with gene regulation by one or more Smad proteins and TGF β or activin.
16. An isolated double strand DNA molecule comprising the sequence 5' WXYCAGACZ 3' or a functional equivalent thereof, wherein in said nucleotide sequence W represents A or G, X represents G or T, Y represents C, A, G or T and Z represents A or C.
17. An isolated double strand DNA molecule according to claim 16 which has the sequence 5' AG(C/A)CAGACA 3'.
18. An isolated double strand DNA molecule according to claim 16 which has the sequence 5' ATGCAGACA 3'.
19. An isolated double strand DNA molecule according to claim 16 which has the sequence 5' GGCCAGACA 3'.
20. A therapeutic agent which inhibits or activates transcriptional activity or binding of one or more Smad proteins with a promoter or enhancer implicated in the gene regulation by TGF β or activin, said promoter or enhancer comprising the nucleotide sequence 5' WXYCAGACZ 3' or a functional equivalent thereof, wherein in said nucleotide sequence W represents A or G, X represents G or T, Y represents C, A or G and Z represents A or C.
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21. A therapeutic agent identified in a method according to ~~any one of~~ ^{Claim 1}

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~~claims 1-4.~~

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